



IN THE PATENT OFFICE,
NEW ZEALAND

PRIORITY DOCUMENT

REC'D 14 SEP 1992

WIPO PCT

In the matter of the Patents Act 1953
and the Regulations thereunder;

AND

In the matter of an
application for Letters
Patent, numbered 239223 in
the name of MICHAEL STUART
GARDNER.

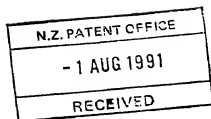
Certificate

I KENNETH BRUCE POPPLEWELL Assistant Commissioner of
Patents for New Zealand, Hereby Certify that annexed is a
true copy of the Provisional specification (including
drawings) as filed on 1 August 1991, with an application for
Letters Patent, numbered 239223 made by MICHAEL STUART
GARDNER.

AS WITNESS MY HAND this 14th day of August 1992.



NEW ZEALAND
PATENTS ACT 1953
PROVISIONAL SPECIFICATION
IMPROVED EAR TAG APPLICATOR



I, MICHAEL STUART GARDNER, of 108 Waiatarua Road,
Remuera, Auckland, New Zealand, a New Zealand citizen,
do hereby declare this invention to be described in and
by the following statement:

The present invention relates to an improved ear tag applicator.

More particularly, the present invention relates to an improved applicator for applying ear tags to animals
5 whereby the ear tag engagement means is locked until the tag is inserted and whereupon it pivots away from the applicator upon insertion of the tag.

To the present time a wide range of ear tag applicators have been known. These generally consist of
10 a pliers type of applicator, often of the trocar type, which usually involves a hand held appliance whereby in use a pin or blade pierces the animal's ear and then draws through the head of the ear tag. In such applicators the manner in which the blade or pin is
15 positioned and directed is important. Prior art applicators have used a variety of means to achieve this including a relatively complex slidingly movable element within a housing as found in New Zealand Patent Specification No. 205008. Other applicators have
20 utilised the use of mechanical retention means to keep the blade or pin in position prior to, during or after insertion of the ear tag.

The aforesaid applicators have tended to be complex and/or inefficient. It is an object of the present
25 invention to address these difficulties.

According to one broad aspect of the invention there is provided an applicator tool for applying an ear

tag to an animal comprising actuating means connected to upper and lower jaw means the said jaw means being movable towards and away from each other, driving means comprising a body portion and elongate tag engagement means wherein the tag engagement means is pivotable and the load on the tag engagement means is located below the point of pivot thereby restraining said tag engagement means in a first position and whereby said tag engagement means is pivotable away from the applicator to a second position once the ear tag has been applied to the animal.

In a preferred form of the invention the tag engagement means comprises a pin which in its first position is substantially diagonal to the upper and lower jaw means and is pivotable so as to lie in substantially the same plane as the upper jaw means upon insertion of an ear tag.

The driving means preferably consists of a body portion movable about a pivot wherein the said movement is determined by restraining means located around the said body portion and wherein biasing means assists to restrain the said driving means in a first position.

Further objects of the invention will become apparent from the following description which is given by way of example only of a preferred embodiment of the invention. Reference is made to the accompanying drawings wherein:

Figure 1: is a side elevational view of a preferred form of the applicator tool according to the invention showing the driving means in a "cocked" position and showing part of the upper jaw means partially cut away;

Figure 2: is again a partially cut away view of the applicator tool of Figure 1 showing the driving means in a "spent" position;

Figure 3: is a diagrammatic side elevational view of an applicator tool of Figure 1 to illustrate the insertion of a one piece ear tag - prior to insertion of the ear tag;

Figure 4: shows the insertion of the ear tag using the applicator shown in Figure 3 upon insertion of the ear tag through an animal's ear;

Figure 5: is an ear tag applicator as shown in Figure 1 illustrated with a two piece ear tag;

Figure 6: shows the applicator and ear tag of Figure 5 upon insertion of the ear tag through an animal's ear.

The applicator of the present invention may be constructed according to the pliers type of applicator tool, as embodied in existing applicator tools. In Figure 1, the applicator tool is referenced by Arrow 1.

It has actuating means comprising upper handle 2 and lower handle 3. Upper handle 2 is integrally formed with lower jaw 4 and lower handle 3 is integrally formed

with upper jaw 5. It will be appreciated that upon the closing of handles 2 and 3, upper jaw 5 and lower jaw 4 will be movable towards each other, and vice versa.

The cut away portion of upper jaw 5 discloses a
5 hollow interior 6 within which are positioned various restraining means. The first is an "L" shaped restraining means 7 comprising an elongate base 8 and upstand 9. The other restraining means comprises an inverted "L" shaped restraining means 10 wherein the
10 upstand 11 is substantially vertical.

The applicator tool has a biasing means 12 which is kept in tension by means of spacer 13.

The apparatus has a driving means 14 comprising a body portion 15 tag engagement means 16 and centrally
15 located pivot 17.

It will be seen that body portion 15 has five sides - 15A, which in the "cocked" position in which the driving means is located in Figure 1, points downwardly, 15B to which is attached tag engagement
20 means 16, side 15C which abuts against restraining means 7, side 15D which is in abutment with the free end of biasing means 12 and 15E which points towards the front of the applicator tool.

In the present position, for convenience referred
25 to as the "cocked" position the driving means is retained in position by restraining means 7 and biasing means 12. When an ear tag is loaded onto the tag

engagement means, which in a preferred embodiment is pin shaped, the driving means will be retained in "cocked" position by virtue of the fact that the tag engagement means is located rearward and below of the point of pivot. This means that a minimal biasing of biasing means 12 is required to keep the pin in the "cocked" position.

As an illustration of the manner of operation of the applicator tool reference is made to Figures 3 and 4 wherein a one piece ear tag is shown to be applied. The ear tag 18 is shown to have a body portion 19 and pointed head 20. Figure 1 shows the applicator tool with the upper jaw 5 and lower jaw 4 in an open position and with the driving means in a "cocked" position. Figure 4 shows the driving means still in a "cocked" position but with the sharpened head 20 having pierced an animal's ear 21.

Figures 5 and 6 illustrate the applicator tool applying a two piece ear tag wherein the male portion of the ear tag 22 is attached to the tag engagement means (not shown) and wherein the female portion of the ear tag 23 is attached to a tag holder means 24 spring loaded onto lower jaw 4.

Figure 6 shows the same ear tag having pierced an animal's ear 21.

In all the above cases the driving means remains in a "cocked" position. It will be seen that upon

completion of the above steps both handles 2 and 3 and jaws 4 and 5 will be in a closed position. Upon insertion of the tag through the animal's ear (or other skin) the tag engagement means will need to be removed
5 from the ear tag/ear. This may be achieved by pulling the applicator tool away from the animal's ear or alternatively by the animal itself pulling away from the applicator tool.

Upon this occurring the tag engagement means 16
10 will pivot in the direction of arrow A. That is, from a substantially vertical to a substantially horizontal position as illustrated by position B of Figure 2. In this position, conveniently referred to as the "spent" position, the sides of body portion 15 will be located
15 as follows: 15A will be positioned upwardly and forwardly, 15B forwardly, 15C downwardly, 15D downwardly and rearwardly and 15E would be restrained by means of the restraining means 12. Further travel would be prevented by tag engagement means 16 striking the lower
20 portion of restraining means 11.

It will be appreciated from the above that the tag engagement means of the present invention has a first "cocked" position and a second "spent" position, with the position being determined by the combined effect of
25 the restraining means, biasing means and load placed on the tag engagement means itself. It will be seen that the movement of the driving means from the substantially

vertical "cocked" position to the substantially horizontal "spent" position may be relatively simply and efficiently achieved with a minimum of movement and moving parts. This provides for an applicator tool
5 having enhanced performance characteristics and one which provides greater ease of use for the person applying ear tags.

It will also be appreciated that the positioning of the tag engagement means is determined by a combination
10 of factors as opposed to a specific restraining means which holds the body portion or tag engagement means in a fixed position until the tag is inserted.

Where in the foregoing description reference has been made to specific components or integers of the
15 invention having known equivalents then such equivalents are herein incorporated as if individually set forth.

Although this invention has been described by way of example and with reference to possible embodiments thereof it is to be understood that modifications or
20 improvements may be made thereto without departing from the scope or spirit of the invention.

MICHAEL STUART GARDNER

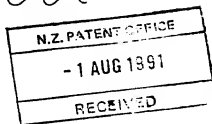
By His Attorneys

BALDWIN, SON & CAREY

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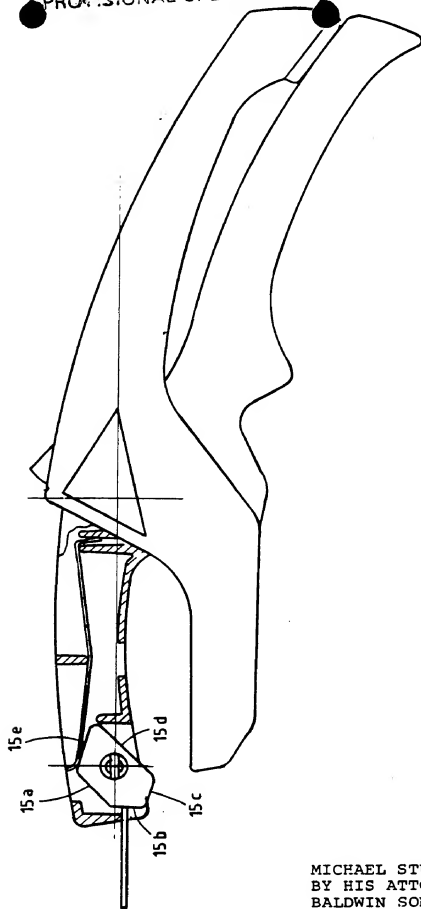


FIG. 2

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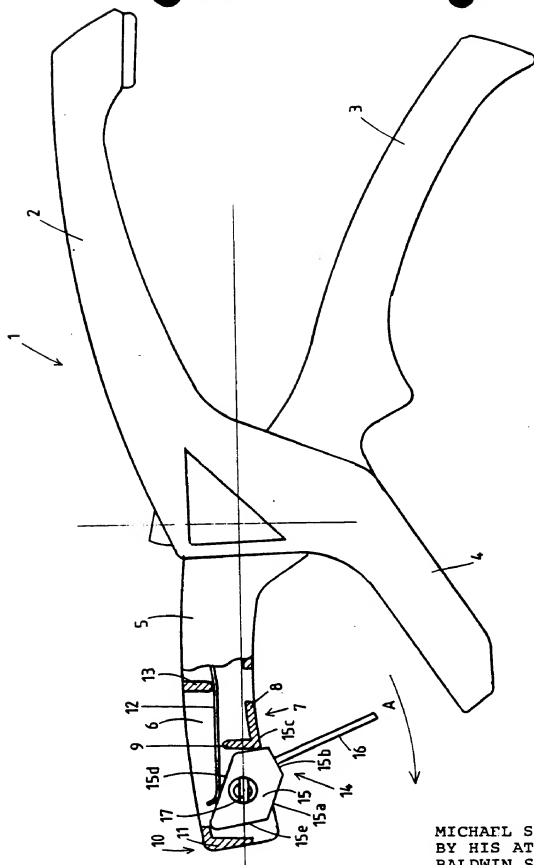


FIG. 1

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MSG

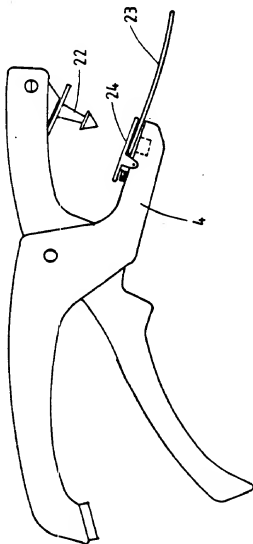


FIG. 5

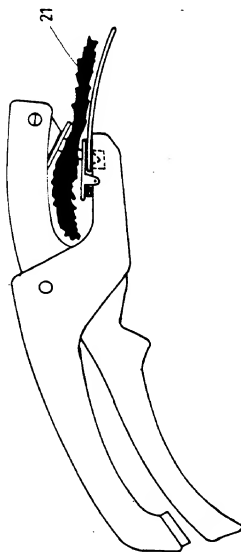


FIG. 6

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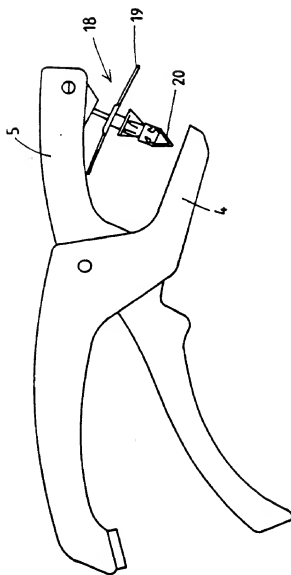


FIG. 3

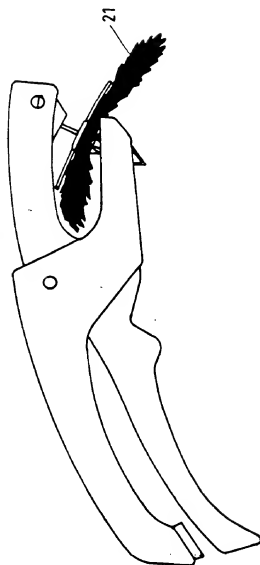


FIG. 4

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